UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/691,649	10/17/2000	Alastair Hugh Chisholm	24522-716	3572

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MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER
EDELMAN, BRADLEY E

ART UNIT	PAPER NUMBER
2153	

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	09/691,649	CHISHOLM ET AL.
	Examiner	Art Unit
	Bradley Edelman	2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _05 February 2004_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,3-16 and 18-20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-16 and 18-20_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _17 October 2000_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

This Office action is in response to Applicant's amendments and request for

reconsideration filed on February 5, 2004. Claims 1, 3-16, and 18-20 are presented for

further examination. Note: this is a final action on the merits of this application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1.   Claims 1 and 3-8 are rejected under 35 U.S.C. 102(e) as being anticipated by

Walker et al. (U.S. Patent No. 6,061,723, hereinafter "Walker").

In considering claim 1, Walker discloses a method for identifying a causal event

("primaryFailure," col. 6, line 57) among a plurality of events detected by a management

station ("network management apparatus," col. 5, line 35), which causal event is

indicative of the underlying cause of more than one of said plurality of events (i.e. the

primaryFailure indicates a broken element that causes failure events for inaccessible

elements, col. 5, lines 52-55), the method comprising the steps of:

Considering the location of the network device causing each event in the plurality

of events by, for each event, determining the number of devices and/or links between

the device causing the event and the network management station (col. 7, lines 1-20;

Fig. 1, map 108, wherein a manager would view the topology map showing the status of

each element as reported in the ping events, and determine the number of devices

between the device causing the event and the network management station by looking

at the map; and

Determining as said causal event, the event for which the determined number of

devices and/or links is the fewest (again, the manager would look at the topology status

map to determine that the closest link to the manager is the causal event; see col. 6,

lines 1-5, describing that the system us used with OpenView Network Node Manager

product, which allows managers to view the network configuration).

In considering claim 3, Walker further discloses that the step of determining the

number of devices and/or links between the device causing the event and the network

management station comprises the steps of determining the shortest path between the

device causing the event and the network management station using the topology of the

network (again, the manager will view the topology status map to determine the shortest

path) and calculating the number of devices and/or links in the determined shortest path

(the manager will add up the number of links to determine the shortest path).

In considering claim 4, Walker further discloses receiving each event (col. 7 describes the "ping" process), and automatically determining the number of devices and/or links between the device causing the event and the network management station (col. 7, lines 8-20, Fig. 1, wherein by displaying a topology map, the system automatically determines the number of devices between the management station and the device causing each failure timeout event).

In considering claim 5, Walker further discloses storing determined number of devices between the device causing the event and the network management station for each event (again, the topology map shows this).

In considering claim 6, Walker further discloses that the step of determining as said causal event comprises the step of selecting as the causal event the event for which the number of devices and/or links between the device causing the event and the network management station, is the fewest (again, the manager would look at the topology status map to determine that the closest device – i.e. the one with the fewest links to the manager – is the causal event).

In considering claim 7, Walker further discloses prior to the step of considering, determining if the plurality of events are related, and if so, storing the plurality of related events in an event list (col. 7, lines 21-60, wherein the system "analyzes the status of interfaces along the criticalRoute" to determine the status of each link, and stores it in a

list, thus determining that the interfaces along the criticalRoute are related before an administrator can view the updated topology information).

In considering claim 8, Walker further discloses that the step of determining if the plurality of events are related comprises determining the type of event for each of the plurality of events, and determining that the plurality of events are related if the events are of a similar type (col. 7, lines 21-45, wherein nodes B.1, B.2 → Z.1 fail, the system determines that the failures of B.2 → Z.1 are related to the primary failure of B.1 and stores that in the list).

In considering claim 18, Walker further discloses a computer readable medium having a computer program for carrying out the method as claimed in claim 1 (i.e. the management apparatus).

2.   Claims 1, 3-9, 11-13, 15, 16, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Harris (U.S. Patent no. 5,771,274).

In considering claim 1, Harris discloses a method for identifying a causal event ("significant fault alarm event," col. 2, lines 49-50) among a plurality of events detected by a management station ("Fault Management System 101," Fig. 1), which causal event is indicative of the underlying cause of more than one of said plurality of events (i.e. the significant fault alarm event is "most indicative of the location of the failure," col. 2, lines 50-54), the method comprising the steps of:

Considering the location ("relative location") of the network device causing each event in the plurality of events by, for each event, determining the number of devices and/or links between the device causing the event and the network management station ("sequence numbers"; col. 5, lines 32-37, 42-44, 51-59); and

Determining as said causal event, the event for which the determined number of devices and/or links is the fewest (col. 5, lines 51-59, wherein the sequence numbers and relative locations are used to determine which events are from "upstream" devices and which are "significant fault alarm events").

In considering claim 3, Harris further discloses that the step of determining the number of devices and/or links between the device causing the event and the network management station comprises the steps of determining the shortest path between the device causing the event and the network management station using the topology of the network and calculating the number of devices and/or links in the determined shortest path (col. 5, lines 32-60, wherein the system uses the "sequence number" to determine its relative location within the circuit, and thus deduces the number of devices and/or links between the event-producing device and the management station).

In considering claim 4, Harris further discloses receiving each event ("alarms"), and automatically determining the number of devices and/or links between the device causing the event and the network management station (col. 5, lines 32-60, wherein the system determines the relative locations automatically).

In considering claim 5, Harris further discloses storing determined number of devices between the device causing the event and the network management station for each event (col. 4, line 66 – col. 5, line 30; col. 5, lines 54-55, describing that the sequence numbers are stored in a database).

In considering claim 6, Harris further discloses that the step of determining as said causal event comprises the step of selecting as the causal event the event for which the number of devices and/or links between the device causing the event and the network management station, is the fewest (col. 6, line 50 – col. 7 describes a method for determining which alarm is closest or "furthest upstream," and is thus the causal event).

In considering claim 7, Harris further discloses prior to the step of considering, determining if the plurality of events are related, and if so, storing the plurality of related events in an event list (col. 5, lines 32-60, "if any alarms are associated to the same circuit identifier, then it is possible to relate the given alarm to the others").

In considering claim 8, Harris further discloses that the step of determining if the plurality of events are related comprises determining the type of event for each of the plurality of events, and determining that the plurality of events are related if the events are of a similar type (i.e. "associated to the same circuit identifier).

In considering claim 9, Harris further discloses receiving each event, and the step of determining if said plurality of events are related comprises the step of: for each event, determining the time difference between the time of the received event and the time of the immediately preceding event, and determining that the received event is related to the immediately preceding event if the time difference is less than a predetermined time period (col. 7, lines 22-34, "any alarms that are actually correlated to the same problem should have approximately the same reporting time-stamp...").

In considering claim 11, Harris further discloses that if the received event is related, storing it in a list of related events, and if it is not related, comparing the type of events in the existing list of related events and selecting events of a similar relevant type (col. 5, lines 32-60, wherein this would be necessary to carry out the comparison steps for related events).

In considering claim 12, Harris further discloses receiving each event, and the step of determining if said plurality of events are related comprises the step of: for each event, comparing the type of the received event and the type of the immediately preceding event, and determining that the received event is related to the immediately preceding event if the event type of the two events are similar (col. 7, line 58 – col. 8, line 28, wherein a circuit alarm counter is maintained to indicate which alarms are related).

In considering claim 13, as discussed with respect to claims 9 and claim 12, Harris discloses using the time difference and the event types to determine whether a first event is related to an immediately received next event.

In considering claim 15, Harris further discloses receiving each event and automatically determining if the event is related to the immediately preceding event and if it is determined that the received event is related, storing the received event in the event list (col. 5, lines 51-59; col. 7, lines 22-34).

In considering claim 16, Harris further discloses that if it is determined that the event is not related to the immediately preceding event, the event is stored in a new event list (col. 4, 11-24, wherein alarms are stored in a database according to the types of circuits they are from).

In considering claims 18, 19 and 20, these claims all present a computer-implemented means for performing the method steps disclosed in claim 1. Harris further discloses that the steps disclosed in claim 1 are all carried out by such computer-implemented means (see col. 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Harris.

In considering claims 10 and 14, each of these claims discloses that the time

period is in the range of 0 seconds to 5 minutes. Harris does not mention a specific

time period. Nonetheless, it would have been obvious to a person having ordinary skill

in the art to set the time period taught by Harris in the range of 0 seconds to a few

minutes, because a short delay between faults is a good indicator that the faults

occurred in a similar location at a similar time, and were thus incurred by related

machines on the same circuit.

Response to Arguments

4.   In response to Applicant's arguments filed on February 5, 2004, Applicant argues

that Walker does not disclose the invention as currently claimed in the amended claims.

As a primary note, claims 19 and 20 are different from claim 1 in one key respect

– claims 19 and 20 describe that the steps performed by the system are all performed

by a computer (either via software or via the manager station). Claim 1, however, only

cites a method, and thus can be performed by a computer or via other means, such as

by a network manager.

Applicant's primary arguments are as follows:

a.   Regarding claims 1, 19, and 20, Walker does not disclose an algorithm that

performs the steps of considering the location of the network device causing each

event.

b.   Regarding claims 1, 19, and 20, Walker does not perform a count of the number

of devices and/or links between the device causing the event and the network

management station.

c.   Regarding claim 4, Walker does not automatically count or otherwise determine

the number of devices and/or links.

d.   Regarding claim 7, Walker does not disclose determining whether a plurality of

events are related before storing them in an event list.

In considering (a) and (b), Applicant contends that regarding claims 1, 19, and

20, Walker does not disclose an algorithm that performs the steps of considering the

location of the network device causing each event, and does not perform a count of the

number of devices and/or links between the device causing the event and the network

management station. With respect to claims 19 and 20, Examiner agrees. However,

with respect to claim 1, as described in the note above, Examiner respectfully

disagrees. Claim 1 does not include any language that requires an algorithm or other

automatic process to perform the critical steps of performing a count and then

determining the causal event based on the count. Thus, claim 1 is anticipated by

Walker, which contemplates allowing a manager to view the topology information to

deduce which nodes have failed and how many links are between the failed nodes and the management station.

In considering (c), Applicant contends that Walker does not automatically count or otherwise determine the number of devices and/or links, as claimed in claim 4. Examiner respectfully disagrees. By performing the monitoring steps required to display the topology map shown in Figs. 1, 5, 7, and 8 of the Walker's specification, Walker's system necessarily determines the number of devices and/or links between the device causing the event and the management station.

In considering (d), Applicant contends that Walker does not disclose determining whether a plurality of events are related before storing them in an event list, as claimed in claim 7. Examiner respectfully disagrees. Note, Examiner has objected to claims 9, 12, and 13. Each of these claims further defines the meaning of "determining if events are related" as used in claim 7. However, the use of the term "related" is broad as used in claim 7. The Walker system does in fact determine if the plurality of events are related before storing them in an event list, as described in col. 7, lines 21-60, wherein the system "analyzes the status of interfaces along the criticalRoute" to determine the status of each link, and stores it in a list, thus determining that the interfaces along the criticalRoute are related (since they are all part of the criticalRoute).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley Edelman whose telephone number is (703) 306-3041. The examiner can normally be reached on Monday to Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on (703) 305-4792. The fax phone numbers for the organization where this application or proceeding is assigned are as follows:
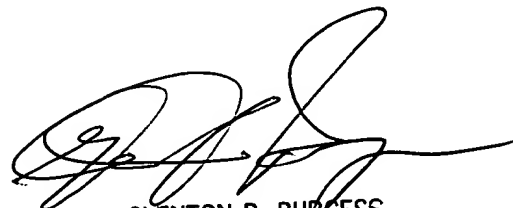
For all correspondences: (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 305-

3900.

GLENTON B. BURGESS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

BE
April 30, 2004